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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FERRIS, DERRICK W	

ART UNIT	PAPER NUMBER
2663	

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16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/513,912	PATEL ET AL.	
	Examiner	Art Unit	
	Derrick W. Ferris	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-132* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,11,15-53,55-57,61 and 63-132* is/are rejected.

7)☒ Claim(s) *12-14 and 62* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. **Claims 1-3, 5-7, 11-53, 55-57, and 61-132** as amended are still in consideration for this application.

2. Examiner does **not withdraw** obviousness rejections that includes at least the *Puuskari* and *Forslow* references for Office action filed 03/04/04.

At issue for **claims 1, 51, and 128** are a "physical location" and a "virtual group" which are the same two items at issue before. Examiner notes a reasonable but broad interpretation of both terms. In particular, for a physical location an IP address determines the location of a device on the network since that particular device is based on a physical location which also may include an application running on the device. Specifically as mentioned in the last Office action since a logical address, such as an IP address (i.e., a source and/or destination address), marks a physical device as part of a PDP context, examiner notes a reasonable but broad interpretation of "physical location". Examiner has carefully reviewed the recited claimed subject matter and applicant's arguments. The examiner will agree that a "physical location" as further defined in the context of the depending claims may not be clearly taught by the references in combination. Thus the examiner has withdrawn the rejection for these sets of claims. The examiner encourages the applicant to further include these claims in the independent claim, e.g., see claim 62. With respect to a "virtual group", applicant argues limitations not found in the claim. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which

applicant relies (i.e., a meter 70, an adaptive congestion controller 2 and one or more class of service queues 74 as mentioned in applicant's specification at page 21, lines 18-23) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Examiner would like to further point out that applicant left out the next sentence in applicant's specification which states that virtual groups can comprise *other* components. Examiner has applied the interpretation that virtual groups can comprise other components. With respect to the further limitation of assigning each packet to one of a plurality of "virtual groups" based on the location for the corresponding flow, the virtual groups comprising discrete transmission resources see figure 11 of *Forslow* in relation to the queuing structure of the SGSN. In particular, note that each application flow is queued and handled separately.

As to **claims 101 and 111**, the issue is generating dynamic congestion control parameters for a wireless network based on the status of the network, the status of the network comprising either network loading or performance information. In particular, applicant appears to argue more that what is claimed with respect to "based on a status of the wireless network". Specifically, it appears from applicant's arguments that applicant intends a device to have *prior* knowledge of the state of congestion through estimates before generating parameters thus being dynamic which is not recited in the claims. In other words, it appears applicant is arguing that a step of generating is "based on bandwidth estimates" in reference to applicant's specification at e.g., page 35, lines 18-21 (emphasis added). The examiner's interpretation is that based on a status of the network

can also read on based on a state of the network which is dynamic since the state for each device changes. In particular, RSVP uses state information in each device to determine if a reservation is feasible using both the RESV and PATH messages as is known in the art where the RESV and PATH messages contain control parameters for a wireless traffic queue. ATM works in a similar fashion using the CAC algorithm. *Puuskari* teaches both ATM and RSVP on e.g., pages 23-24. For example, *Puuskari* teaches that during RSVP negotiation, the GPRS system may indicate that it cannot support various token bucket sizes or maximum packet sizes. Thus certain parameters must be set before RSVP will accept a reservation, see e.g., page 23, lines 18-35 of *Puuskari*. Should applicant amend the specification to further recite (or replace) "based on a status of a wireless network" with "based on bandwidth estimates of a wireless network" then the examiner would withdrawn the rejection since RSVP and the CAC functions do not use estimates. However, the examiner feels such a claim amendment may still not be allowable since there are known systems that generate parameters based on bandwidth estimates such as TCP for wireless protocols. Thus such an amendment would require an additional search and/or further consideration.

As to **claims 120 and 123**, see figure 11 of *Forslow* in relation to the queuing structure of the SGSN. Applicant argues the reference does not teach of queuing a packet in a flow in a queue that is associated with the location to which the flow is destined. *Forslow* teaches that one queue is based on packets having the same PDP context where the PDP context teaches a corresponding flow to a first location since the PDP context provides information specific to that location, see e.g., page 21, lines 6-24.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 5-6, 11, 15-16, 23-33, 35-37, 39, 42-44, 48-50, 51, 55-56, 61, 63-66, 73-83, 85-87, 89, 92-94, 98-100, 120, 123, and 126-132** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen*.

As to **claims 1, 51 and 128**, applicant claims a method of grouping packets with a common flow identifier using a generic concept of virtual groups. Examiner notes that virtual groups are nothing more than an aggregation of flows having one or more similar characteristic as defined, inter alia, in applicant's specification on page 21, lines 8-18. *Puuskari* discloses a dynamic packet-base quality of service (QoS) mechanism provided within a "transmission tunnel" defined by a more static packet data protocol context (PDP context). *Puuskari* discloses in figure 2 going from a wireless protocol to a wireline protocol wherein the wireline protocol is an encapsulated protocol (i.e., GTP) in combination with IP (note that IP extends to the mobile in the form of a PDP context, e.g., see page 15 of *Puuskari*). The examiner would like to point out that applicant's claims may not clearly define the perspective or direction of a particular traffic flow with respect to queuing traffic thus leaving the examiner with a reasonable but broad interpretation of the recited claimed subject matter. As such, *Puuskari* teaches receiving

a stream of packets where each stream of packets is unique based on the IP address as uniquely identifying a flow. Applicant supports the above concept in applicant's specification at top of page 25 using an IP address (as part of a tuple). Examiner notes that also inherently or indirectly the flow identifier also acts as a "physical location" of a mobile device in the wireless network. In particular, the IP address addresses a specific flow in the network for a particular mobile device thus meeting the requirement using a reasonable but broad interpretation of "physical location".

Puuskari may be silent or deficient to the further limitation "assigning each packet to one of a plurality of virtual groups based on the location for the corresponding flow, the virtual group comprising discrete transmission resources". In particular, *Puuskari* teaches that the GGSN or an external host may optimally maintain information about different application connections and traffic flows but is not required (see page 23, lines 1-5).

Forslow cures the above-cited deficiency by supporting multiple flows for a mobile based on the application layer (e.g., see top of page 9).

Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention include the to limitation "assigning each packet to one of a plurality of virtual groups based on the location for the corresponding flow, the virtual group comprising discrete transmission resources". In particular, one would be motivated to perform such an action in order to provide dynamic QoS per session for each application. Thus *Forslow* discloses such a motivation (see abstract) and provides a reasonable expectation of success based on page 23, lines 1-5 of *Puuskari*. Furthermore, *Forslow*

discloses using a queue for each application flow, see figure 11. In addition, assuming, arguendo, that *Puuskari* does not teach determining for each packet based on the included flow identifier a location of the corresponding flow, *Mikkonen* further teaches using a separate flow identifier. Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to use a separate flow identifier as an IP tag (e.g., see column 7, lines 21-67 and column 9, lines 30-55 of *Mikkonen*). In particular, one skilled in the art would be motivated to using an IP tag to switch each packet since switching at layer 2 is faster then use the network address (i.e., network flow identifier or IP address). In particular, *Mikkonen* discloses this motivation found at column 9, lines 54-67. Examiner also notes a reasonable expected level of success since the IP header is used in determining a label for each packet (e.g., see figure 4b).

As to **claims 5, and 55**, see the same reasoning behind the rejection for claim 2.

As to **claims 6 and 56**, see the reasoning behind the rejection for claim 3.

As to **claims 11 and 61**, see the reasoning behind the rejection for claim 3.

As to **claims 15 and 65**, see the reasoning behind the rejection for claim 2.

As to **claims 16 and 66**, see the reasoning behind the rejection for claim 3.

As to **claims 23 and 73**, see the reasoning behind the rejection for claim 2.

As to **claims 24 and 74**, not clearly disclosed by the reference is an SLA agreement per se. However, *Puuskari* discloses a reasonable but broad interpretation of an SLA in the form of a user agreement as is known in the art for user QoS. Thus using a reasonable but broad interpretation, an SLA agreement is taught by *Puuskari.*

As to **claims 25-29, 75-79**, *Puuskari* discloses associating QoS information with priority information and traffic type [page 6] along with QoS profile information [page 17] which includes peak rate, subscriber rate, maximum burst size, packet size, and delay threshold.

As to **claims 30 and 80**, see the reasoning behind the rejection for claim 2.

As to **claims 31, 32, 81 and 82**, see the reasoning behind the rejection for claim 3.

As to **claims 33, 35, 83 and 85**, *Puuskari* discloses using a layered approach as is known in the art such that either a multi-slot/multi-code or multi-mode indicator (e.g., scheduling determines which slots packets will be transmitted as is well known in the art).

As to **claims 36 and 86**, *Puuskari* discloses a dynamic method.

As to **claims 37 and 87**, *Puuskari* discloses defining the flows to account for the impact of flows (i.e., deal with congestion) [e.g., page 6].

As to **claims 39 and 89**, see the reasoning behind the rejection for claim 2.

As to **claims 42 and 92**, *Puuskari* discloses "metering" packets by discarding packets in a network that do not conform with QoS as is known in the art [e.g., page 6, lines 9-24; page 21, lines 33-35; page 22, line 1].

As to **claims 43, 44, 48, 93, 94, 98 and 108**, *Puuskari* discloses controlling congestion based on available bandwidth [e.g., page 6, lines 9-24].

As to **claims 49-50, 99-100**, *Puuskari* discloses adjusting for QoS dynamically (i.e., dynamically assigning a subsequent packet to a new group based on new attributes for the flow) [e.g., page 6, lines 3-8]. As the service may change, examiner notes that it

would have been obvious to a skilled artisan prior to applicant's invention to also move the packet into another queue since each queue is based on a different level of service (e.g., see page 2, lines 17-24). Examiner furthermore points that no clear reference is given with respect to a first and/or second location such that examiner has taken a reasonable but broad interpretation of the claimed subject matter with respect to a first and second location.

As to **claims 63, 118 and 126**, it would have been obvious to a skilled artisan prior to applicant's invention to implement the system as disclosed by *Puuskari* in software where the motivation is an obvious design consideration/choice.

As to **claims 64, 119 and 127**, it would have been obvious to a skilled artisan prior to applicant's invention to use a processor in general for implementing both a dynamic flow manager and virtual groups. As mentioned above, the general functionality of each is taught by *Puuskari* where the functionality is implement in either software or hardware using a processor (used to control the hardware or software as is known in the art).

As to **claims 120 and 123**, in addition to the rejection for claim 1 with respect to location, it may not be clear from *Puuskari* of queuing a packet for a corresponding flow to a first location in a wireless network in a first queue associated with a first location see e.g., page 2, lines 17-24 of *Puuskari*.

Forslow further discloses a queuing strategy for groups of flows which includes the above limitation for both a first and second location e.g., see figure 11.

Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include queuing a packet for a corresponding flow to a first location in a wireless network in a first queue associated with a first location. In particular, one skilled in the art would have been motivated to use a separate queue for each particular application flow as shown in figure 11, e.g., see page 21, lines 6-23 of *Forslow*.

As to **claim 129**, see the rejection for claim 3.

As to **claim 130**, see the rejection for claim 43.

As to **claim 131**, see the combined rejection for claim 42 and 44.

As to **claim 132**, see the rejection for claim 123.

5. **Claims 101-103, 108-109, 111-113, 117-119** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow*.

As to **claims 101, and 111**, *Puuskari* discloses generating dynamic congestion control parameters for a wireless traffic queue based on a status of the wireless network through the use of QoS parameters as disclosed throughout the specification (e.g., see page 6, lines 9-11 and page 7, lines 7-8). *Puuskari* also discloses dropping excess packets destined for a wireless traffic queue based on dynamic congestion control parameters (as mentioned in the rejection for claim 44).

Puuskari may be unclear with respect to generating dynamic congestion control parameters for a wireless traffic queue based on a status of the wireless network, the status comprising either network loading or performance information e.g., see page 6, lines 9-24.

Forslow discloses performing dynamic QoS as well as using RSVP such that network loading or performance information is taught as part of RSVP, e.g., see page 20, lines 1-21.

Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to perform generating dynamic congestion control parameters for a wireless traffic queue based on the status of the wireless network, the status comprising either network loading or performance information. In particular, one skilled in the art would be motivated to modify *Puuskari* to include queues for each application flow such that the queue is also setup with respect to RSVP where RSVP encompasses network loading information. In particular, if the network is overloaded then the RSVP tunnel is not established and the tunnel is dropped thus teaching a reasonable but broad interpretation of "network loading". Similarly packets are added when the connections are established.

As to **claims 102, 103, 112, and 113**, examiner notes that the services setup using Intserv uses available bandwidth network since the connection will not be established (i.e., reserved) if not enough bandwidth is present in the network [e.g., see RSVP on page 23].

As to **claim 108**, see figure 11 of *Forslow*.

As to **claim 109**, *Puuskari* provides QoS for real-time services [e.g., page 6, lines 9-24].

As to **claim 117**, *Puuskari* discloses service queues in general for more than one QoS class, thus a plurality of service queues is disclosed along with congestion control in general.

As to **claims 118-119**, see e.g., *Forslow* page 20, lines 1-20

6. **Claims 2, 3,** 7, **34, 52, 53, 57 and 84** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and U.S. Patent No. 6,356,759 B1 to *Mustajarvi*.

As to **claims 2, 3, 7, 34, 52, 53, 57 and 84**, *Puuskari, Forslow,* and *Mikkonen* may be silent or deficient to using a power level indicator as part of a QoS characteristic. In particular, *Puuskari* and *Forslow* discloses using characteristics in general to group packets for QoS. Thus examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to use a power level as part of QoS since a power level can be represented as part of a packet as is known in the art. *Mustajarvi* discloses using a power indicator as part of a packet (see figure 4) thus providing a motivation for using a power level indicator as part of a QoS characteristic.

7. **Claims 12-14, 17-18, 20-22, 45, 62, 67-68, 70-72, and 95** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* , "Quasi-Source Resource Allocation with Interference Avoidance for Fixed Wireless Systems" by *Chawla et al.* ("*Chawla*") and U.S. Patent No. 6,021,309 to *Sherman et al.* ("*Sherman*").

As to **claims 17-18, 20-22, 45, 67-68, 70-72, and 95**, *Puuskari* may be generally silent to specific wireless attributes of a wireless network parameter. However, examiner notes that it would have been obvious to a skilled artisan to realize that physical attributes impact QoS in general. One motivation would be properties of the wireless network (i.e., wireless network parameters) effect the quality of the wireless information propagating through the wireless system and thus impact in the QoS for the network for that particular connection. For example, *Chawla* discloses using beams to sector a cell as is known in the art. Examiner notes that a skilled artisan would also recognize that certain inherent latitude and longitude values will place the mobile within a specific sector of a cell. In another example, *Sherman* also discloses the general use of geographical-defined service areas along with a frequency re-use pattern (i.e., frequency plan).

8. **Claims 104, 107, and 114** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view "Quasi-Source Resource Allocation with Interference Avoidance for Fixed Wireless Systems" by *Chawla et al.* ("*Chawla*") and U.S. Patent No. 6,021,309 to *Sherman et al.* ("*Sherman*").

As to **claims 104, 107 and 114**, *Puuskari* is generally silent to the physical attributes of the wireless system (i.e., the sector placement, latitude and longitude, specific beam width within a sector). Examiner notes that it would have been obvious to a skilled artisan to realize that physical attributes impact QoS in general. For example, *Chawla* discloses using beams to sector a cell as is known in the art. Examiner notes that a skilled artisan would also recognize that certain inherent latitude and longitude values will place the mobile within a specific sector of a cell. In another example, *Sherman* also

discloses the general use of geographical-defined service areas along with a frequency re-use pattern (i.e., frequency plan).

9. **Claims 19 and 69** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* , "Quasi-Source Resource Allocation with Interference Avoidance for Fixed Wireless Systems" by *Chawla et al.* ("*Chawla*") and U.S. Patent No. 5,987,326 to *Tiedemann, Jr. et al.*

As to **claims 19 and 69**, *Puuskari* is silent or deficient to performing a soft handoff as is known in the art for a wireless system in general. *Tiedemann* makes up for such a deficiency by disclosing how a soft handoff is performed and parameters needed to perform the handoff (e.g., see figure 3). Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to further perform a soft handover as part of a parameter. *Tiedemann* provides a motivation for performing a soft handover which includes the parameters as recited in the claims. Thus *Tiedemann* cures the above-cited deficiency.

10. **Claims 38, 40, 88 and 90** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and U.S. Patent No. 5,926,458 to *Yin.*

As to **claims 38, 40, 88 and 90**, *Puuskari* is silent or deficient to the type of buffering scheme deployed in a wireless system. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to use a common memory (in general) consisting of buffers/queues for each virtual group. As support, *Yin* discloses a

virtual groups consisting of buffers which form a common memory, thus *Yin* provides a motivation for using a common memory in general (see figure 2 for a common outgoing buffer).

11. **Claims 41, 91, 121, 122, 124 and 125** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and U.S. Patent No. 5,926,458 to *Yin* in further view of "Service Scheduling for General Packet Radio Service Classes" to *Pang et al.* ("*Pang*").

As to **claims 41, 91, 121, 122, 124 and 125**, both *Puuskari* and *Yin* are silent to using a FIFO buffer in general. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to use a FIFO buffer with QoS queuing. *Pang* provides a motivation by disclosing that FIFO queuing for QoS is used when scheduling is concerned (see section II (a) on page 1230). Examiner also notes a reasonable but broad interpretation of queue identifier.

12. **Claims 46-47, 96, and 97** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of US Patent No. 6,587,457 B1 to *Mikkonen* and "Quality of service management functions in 3rd generation mobile telecommunication networks" to *Kalliokulju*.

As to **claims 46-47, 96, and 97,** it may not be clear from *Puuskari* that available bandwidth is based on air-resource estimates, pricing strategy information, or historical usage information respectfully. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to include various available bandwidth indicators including air-resource estimates, pricing strategy information, or historical

usage. *Kalliokulju* provides further motivation by disclosing various available bandwidth indications in general including air-resource estimates, pricing strategy, and historical usage information (e.g., page 1285).

13. **Claims 105, 106, 110, 115, and 116** are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/48310 to *Puuskari* in view of WO 99/05828 to *Forslow* and in further view of "Quality of service management functions in 3rd generation mobile telecommunication networks" to *Kalliokulju*.

As to **claims 105, 106, 110, 115, and 116,** it may not be clear from *Puuskari* that available bandwidth is based on air-resource estimates, pricing strategy information, or historical usage information respectfully. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to include various available bandwidth indicators including air-resource estimates, pricing strategy information, or historical usage. *Kalliokulju* provides further motivation by disclosing various available bandwidth indications in general including air-resource estimates, pricing strategy, and historical usage information (e.g., page 1285).

Allowable Subject Matter

14. **Claims 12-14 and 62** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris
Examiner
Art Unit 2663

DWF

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 6/25/04